

Comparison of sequences from BSG1037 (SEQ ID NO.:3) and BSG1057 (SEQ ID NO.:4) in the 30kDa movement protein coding region (nts 4903-5709). Non-identities are indicated by _ and identities are indicated by *.

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1037      ATGGCTCTAGTTGTTAAAGGAAAAGTGAATATCAATGAGTTTATCGACCT
1057      ATGGCTCTAGTTGTTAAAGGAAAAGTGAATATCAATGAGTTTATCGACCT
*****

1037      GACAAAATGGAGAAGATCTTACCGTCGATGTTACCCCTGTAAAGAGTG
1057      GACAAAATGGAGAAGATCTTACCGTCGATGTTACCCCTGTAAAGAGTG
*****

1037      TTATGTGTTCCAAAGTTGATAAAATAATGGTTCATGAGAATGAGTCATTG
1057      TTATGTGTTCCAAAGTTGATAAAATAATGGTTCATGAGAATGAGTCATTG
*****

1037      TCAGGGGTGAACCTTCTTAAAGGAGTTAAGCTTATTGATAGTGGATACGT
1057      TCAGGGGTGAACCTTCTTAAAGGAGTTAAGCTTATTGATAGTGGATACGT
*****

1037      CTGTTTAGCCGGTTTGGTCGTACGGGCGAGTGGAACTTGCCTGACAATT
1057      CTGTTTAGCCGGTTTGGTCGTACGGGCGAGTGGAACTTGCCTGACAATT
*****

1037      GCAGAGGAGGTGTGAGCGTGTGTCTGGTGGACAAAAGGATGGAAAGAGCC
1057      GCAGAGGAGGTGTGAGCGTGTGTCTGGTGGACAAAAGGATGGAAAGAGCC
*****

1037      GACGAGGCCACTCTCGGATCTTACTACACAGCAGCTGCAAGAAAAGATT
1057      GACGAGGCCATTCTCGGATCTTACTACACAGCAGCTGCAAGAAAAGATT
*****

1037      TCAGTTCAGGTCGTTCCCAATTATGCTATAACCAACCAGGACGCGATGA
1057      TCAGTTCAGGTCGTTCCCAATTATGCTATAACCAACCAGGACGCGATGA
*****

1037      AAAACGTCTGGCAAGTTTATGTTAATATTAGAAATGTGAAGATGTCAGCG
1057      GAAACGTCTGGCAAGTTTATGTTAATATTAGAAATGTGAAGATGTCAGCG
*****

1037      GGTTCCTGTCCGCTTCTCTGGAGTTTGTGTCGGTGTGTATTGTTTATAG
1057      GGTTCCTGTCCGCTTCTCTGGAGTTTGTGTCGGTGTGTATTGTTTATAG
*****

1037      AAATAATATAAAATTAGGTTTGAGAGAGAAGATTACAAACGTGAGAGACG
1057      AAATAATATAAAATTAGGTTTGAGAGAGAAGATTACAAACGTGAGAGACG
*****

1037      GAGGGCCCATGGAACCTTACAGAAGAAGTCGTTGATGAGTTCATGGAAGAT
1057      GAGGGCCCATGGAACCTTACAGAAGAAGTCGTTGATGAGTTCATGGAAGAT
*****

1037      GTCCTATGTCGATCAGGCTTGCAAAGTTTCGATCTCGAACCGGAAAAAA
1057      GTCCTATGTCGATCAGGCTTGCAAAGTTTCGATCTCGAACCGGAAAAAA
*****

```

Figure 1a

1037	GAGTGATGTCCGCAAAGGGAAAAATAGTAGTAGTGATCGGTCAGTGCCGA
1057	GAGTGATGTCCGCAAAGGGAAAAATAGTAGTAGTGATCGGTCAGTGCCGA

1037	ACAAGAACTATAGAAATGTTAAGGATTTTGGAGGAATGAGTTTTAAAAAG
1057	ACAAGAACTATAGAAATGTTAAGGATTTTGGAGGAATGAGTTTTAAAAAG

1037	AATAATTTAATCGATGATGATTCGGAGGCTACTGTCGCCGAATCGGATTC
1057	AATAATTTAATCGATGATGATTCGGAGGCTACTGTCGCCGAATCGGATTC

1037	GTTTTAA
1057	GTTTTAA

Figure 1b

Comparison of sequences from BSG1037 (SEQ ID NO.:5) and BSG1057 (SEQ ID NO.:6) in the 30kDa movement protein (aal-268). Non-identities are indicated by _ and identities are indicated by *.

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1037 MALVVKGKVNINEFIDLTMEKILPSMFTPVKSVMC SKVDKIMVHENESL
1057 MALVVKGKVNINEFIDLTMEKILPSMFTPVKSVMC SKVDKIMVHENESL
*****

1037 SGVNLLKGVKLIDSGYVCLAGLVVTGEWNL PDNCRGGVSVCLVDKRMERA
1057 SGVNLLKGVKLIDSGYVCLAGLVVTGEWNL PDNCRGGVSVCLVDKRMERA
*****

1037 DEATLGSYYTAAAKKRQFKVVPNYAITTQDAMKNVWQVLVNIRNVKMSA
1057 DEAILGSYYTAAAKKRQFKVVPNYAITTQDAMRNWQVLVNIRNVKMSA
*** *****

1037 GFCPLSLEFVSVCIVYRNNIKLG LREKITNVRDGGPMELTEEVD EFMED
1057 GFCPLSLEFVSVCIVYRNNIKLG LREKITNVRDGGPMELTEEVD EFMED
*****

1037 VPMSIRLAKFRSRTGKKSDVRKGKNSSSDRSVPNKNYRNVD FGGMSFKK
1057 VPMSIRLAKFRSRTGKKSDVRKGKNSSSDRSVPNKNYRNVD FGGMSFKK
*****

1037>NNLIDDDSEATVAESDSF
1057>NNLIQDDSEATVAESDSF
*****

```

Figure 2

BSG1037 -> Graphic Map

DNA sequence 10403 b.p. GTATTTTACAA ... CGACTCACTATA circular

126/183 reading frame begins at 69, 3417 is suppressible stop codon, and ends at 4919.30K

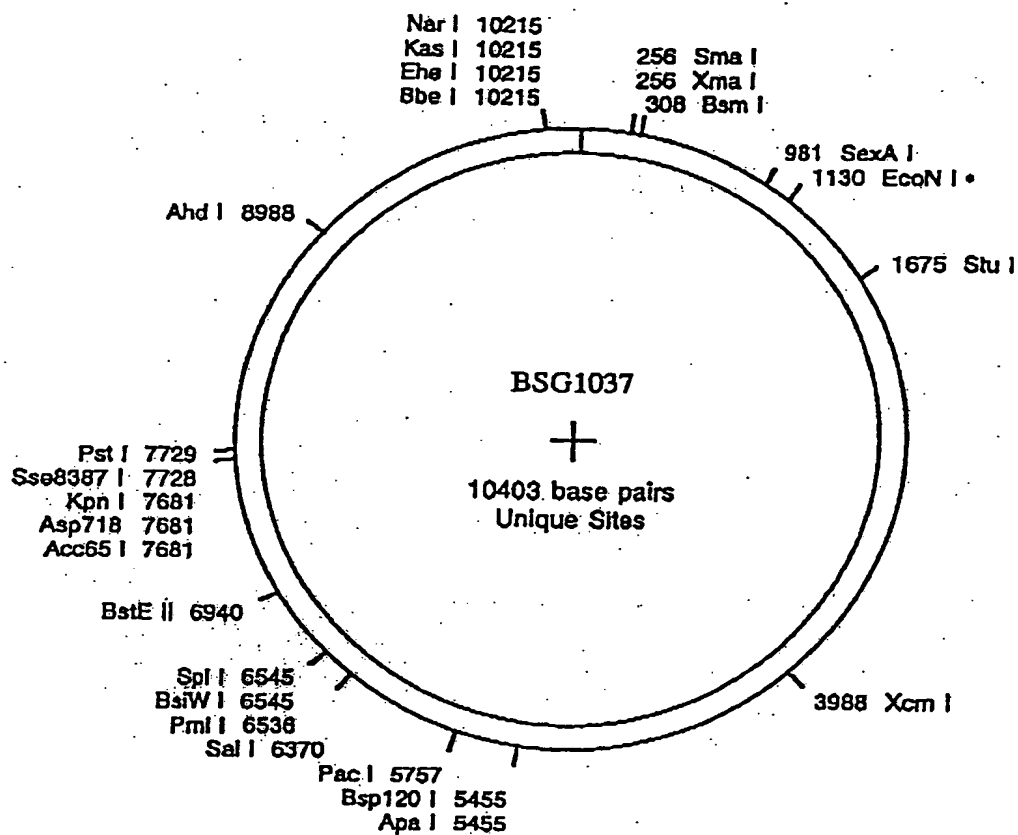


Figure 3

BSG1057 -> Graphic Map

DNA sequenc 10403 b.p. GTATTTTACAA ... CGACTCACTATA circular

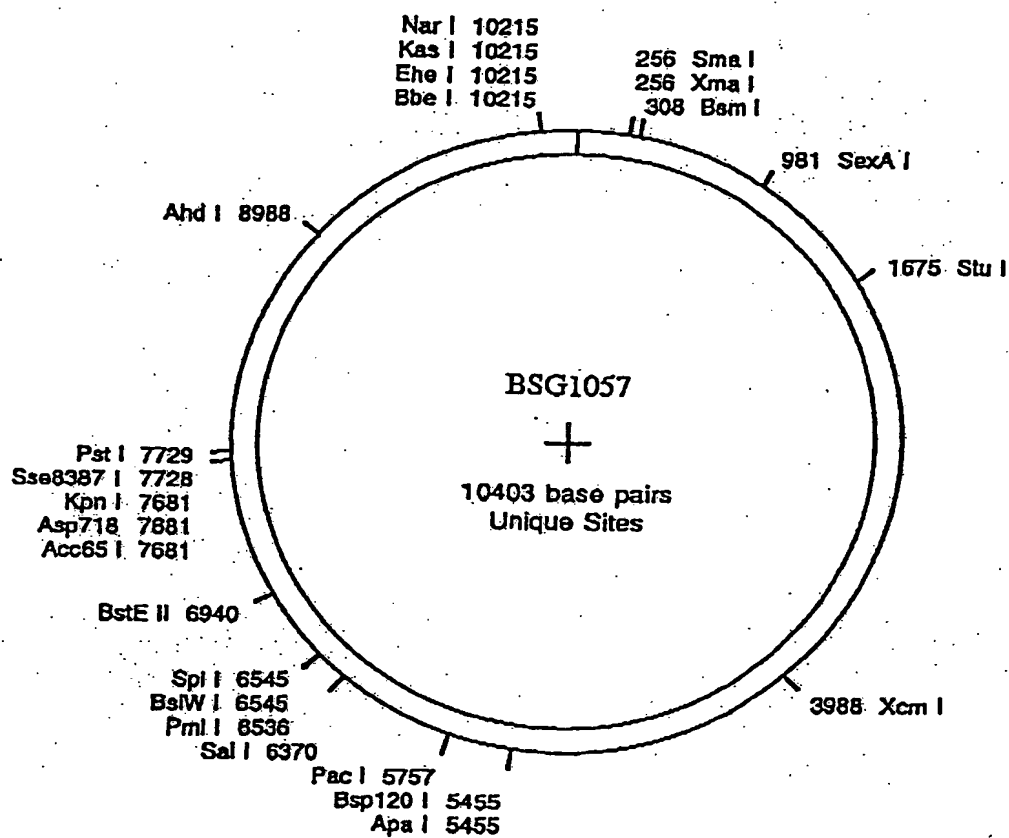


Figure 4

Complete sequence of BSG 1037 (SEQ ID NO.: 1)

GTATTTTACAACAATTACCAACAACAACAACAGACAACATTACAATTACTAT
TTACAATTACAATGGCATAACACA
CAGACAGCTACCACATCAGCTTTGCTGGACACTGTCCGAGGAAACAACCTCCTTGGTC
AATGATCTAGCAAAGCGTCGTCT
TTACGACACAGCGGTTGAAGAGTTTAACGCTCGTGACCGCAGGCCCAAGGTGAACT
TTTCAAAGTAATAAGCGAGGAGC
AGACGCTTATTGCTACCCGGGCGTATCCAGAATTCCAAATTACATTTTATAACACGC
AAAATGCCGTGCATTTCGCTTGCA
GGTGGATTGCGATCTTTAgAACTGGAATATCTGATGATGCAAATTCCCTACGGATCA
TTGACTTATGACATAGGCGGGAA
TTTTGCATCGCATCTGTTCAAGGGACGAGCATATGTACACTGCTGCATGCCCAACCT
GGACGTTTCGAGACATCATGCGGC
ACGAAGGCCAGAAAGACAGTATTGAACTATACCTTTCTAGGCTAGAGAGAGGGGGG
AAAACAGTCCCCAACTTCCAAAAG
GAAGCATTGACAGATACGCAGAAATTCCTGAAGACGCTGTCTGTCACAATACTTTC
CAGACATGCGAACATCAGCCGAT
GCAGCAATCAGGCAGAGTGTATGCCATTGCGCTACACAGCATATATGACATACCAG
CCGATGAGTTCGGGGCGGCACTCT
TGAGGAAAAATGTCCATACGTGCTATGCCGCTTTCCACTTCTCCGAGAACCTGCTTC
TTGAAGATTCATGCGTCAATTTG
GACGAAATCAACGCGTGTTTTTCGCGCGATGGAGACAAGTTGACCTTTTCTTTTGCA
TCAGAGAGTACTCTTAATTACTG
TCATAGTTATTCTAATATTCTTAAGTATGTGTGCAAACTTACTTCCCGGCCTCTAAT
AGAGAGGTTTACATGAAGGAGT
TTTTAGTCACCAGAGTTAATACCTGGTTTTGTAAGTTTTCTAGAATAGATACTTTTCT
TTTGTACAAAGGTGTGGCCCAT
AAAAGTGTAGATAGTGAGCAGTTTTTATACTGCAATGGAAGACGCATGGCATTACAA
AAAGACTCTTGCAATGTGCAACAG
CGAGAGAATCCTCCTTGAGGATTCATCATCAGTCAATTACTGGTTTCCCAAATGAG
GGATATGGTCATCGTACCATTAT
TCGACATTTCTTTGGAGACTAGTAAGAGGACGCGCAAGGAAGTCTTAGTGTCCAAGG
ATTTTCGTGTTTACAGTGCTTAAC
CACATTCGAACATAACCAGGCGAAAGCTCTTACATACGCAAATGTTTTGTCCTTCGTC
GAATCGATTTCGATCGAGGGTAAT
CATTAAACGGTGTGACAGCGAGGTCCGAATGGGATGTGGACAAATCTTTGTTACAATC
CTTGTCCATGACGTTTTACCTGC
ATACTAAGCTTGCCGTTCTAAAGGATGACTTACTGATTAGCAAGTTTAGTCTCGGTT
CGAAAACGGTGTGCCAGCATGTG
TGGGATGAGATTTGCTGGCGTTTTGGGAACGCATTTCCCTCCGTGAAAGAGAGGCTC
TTGAACAGGAACTTATCAGAGT
GGCAGGCGACGCATTAGAGATCAGGGTGCCTGATCTATATGTGACCTTCCACGACA
GATTAGTGAAGTACAGGCT
CTGTGGACATGCCTGCGCTTGACATTAGGAAGAAGATGGAAGAAACGGAAGTGATG
TACAATGCACTTTCAGAATTATCG

Figure 5a

GTGTTAAGGGAGTCTGACAAATTCGATGTTGATGTTTTTTCCAGATGTGCCAATCTT
 TGGAAAGTTGACCCAATGACGGC
 AGCGAAGGTTATAGTCGCGGTCATGAGCAATGAGAGCGGTCTGACTCTCACATTTGA
 ACGACCTACTGAGGCGAATGTTG
 CGCTAGCTTTACAGGATCAAGAGAAGGCTTCAGAAGGTGCATTGGTAGTTACCTCAA
 GAGAAGTTGAAGAACCGTCCATG
 AAGGGTTCGATGGCCAGAGGAGAGTTACAATTAGCTGGTCTTGCTGGAGATCATCCG
 GAATCGTCCTATTCTAAGAACGA
 GGAGATAGAGTCTTTAGAGCAGTTTCATATGGCGACGGCAGATTCGTTAATTCGTAA
 GCAGATGAGCTCGATTGTGTACA
 CGGGTCCGATTAAAGTTCAGCAAATGAAAACTTTATCGATAGCCTGGTAGCATCAC
 TATCTGCTGCGGTGTCGAATCTC
 GTCAAGATCCTCAAAGATACAGCTGCTATTGACCTTGAAACCCGTCAAAAGTTTGA
 GTCTTGGATGTTGCATCTAGGAA
 GTGGTTAATCAAACCAACGGCCAAGAGTCATGCATGGGGTGTTGTTGAAACCCACG
 CGAGGAAGTATCATGTGGCGCTTT
 TGGAAATATGATGAGCAGGGTGTGGTGACATGCGATGATTGGAGAAGAGTAGCTGTT
 AGCTCTGAGTCTGTTGTTTATTCC
 GACATGGCGAAACTCAGAACTCTGCGCAGACTGCTTCGAAACGGAGAACCGCATGT
 CAGTAGCGCAAAGGTTGTTCTTGT
 GGACGGAGTTCGGGGCTGTGGAAAAACCAAAGAAATTCTTTCCAGGGTTAATTTTGA
 TGAAGATCTAATTTTAGTACCTG
 GGAAGCAAGCCGCGGAAATGATCAGAAGACGTGCGAATTCCTCAGGGATTATTGTG
 GCCACGAAGGACAACGTTAAAACC
 GTTGATTCTTTCATGATGAATTTTGGGAAAAGCACACGCTGTCAGTTCAAGAGGTTA
 TTCATTGATGAAGGGTTGATGTT
 GCATACTGGTTGTGTTAATTTTCTTGTGGCGATGTCATTGTGCGAAATTGCATATGTT
 TACGGAGACACACAGCAGATTC
 CATACTCAATAGAGTTTCAGGATTCCCGTACCCCGCCCATTTTGCCAAATTGGAAG
 TTGACGAGGTGGAGACACGCAGA
 ACTACTCTCCGTTGTCCAGCCGATGTCACACATTATCTGAACAGGAGATATGAGGGC
 TTTGTCATGAGCACTTCTTCGGT
 TAAAAAGTCTGTTTCGCAGGAGATGGTTCGGCGGAGCCgCCGTGATCAATCCGATCTC
 AAAACCCTTGCATGGCAAGATCT
 TGACTTTTACCCAATCGGATAAAGAAGCTCTGCTTTCAAGAGGGTATTCAGATGTTC
 ACACTGTGCATGAAGTGCAAGGC
 GAGACATACTCTGATGTTTCACTAGTTAGGTAAACCCCTACACCGGTCTCCATCATTG
 CAGGAGACAGCCACATGTTTT
 GGTCGCATTGTCAAGGCACACCTGTTGCTCAAGTACTACACTGTTGTTATGGATCC
 TTTAGTTAGTATCATTAGAGATC
 TAGAGAACTTAGCTCGTACTTGTTAGATATGTATAAGGTCGATGCAGGAACACAAT
 AGCAATTACAGATTGACTCGGTG
 TTCAAAGGTTCCAATCTTTTTGTTGCAGCGCCAAAGACTGGTGATATTTCTGATATGC
 AGTTTTACTATGATAAGTGTCT
 CCCAGGCAACAGCACCATGATGAATAATTTTGATGCTGTTACCATGAGGTTGACTGA
 CATTTCAATTGAATGTCAAAGATT

Figure 5b

GCATATTGGATATGTCTAAGTCTGTTGCTGCGCCTAAGGATCAAATCAAACCACTAA
 TACCTATGGTACGAACGGCGGCA
 GAAATGCCACGCCAGACTGGACTATTGGAAAATTTAGTGGCGATGATTAAAAGAAA
 CTTTAACGCACCCGAGTTGTCTGG
 CATCATTGATATTGAAAATACTGCATCTTTGGTTGTAGATAAGTTTTTTGATAGTTAT
 TTGCTTAAAGAAAAAAGAAAAC
 CAAATAAAAATGTTTCTTTGTTGAGTAGAGAGTCTCTCAATAGATGGTTAGAAAAGC
 AGGAACAGGTAACAATAGGCCAG
 CTCGCAGATTTTGAATTTTGTGGATTTGCCAGCAGTTGATCAGTACAGACACATGATT
 AAAGCACAACCCAAACAAAAGTT
 GGACACTTCAATCCAAACGGAGTACCCGGCTTTGCAGACGATTGTGTACCATTCAAA
 AAAGATCAATGCAATATTCGGCC
 CGTTGTTTAGTGAGCTTACTAGGCAATTACTGGACAGTGTTGATTTCGAGCAGATTTTT
 GTTTTTACAAGAAAGACACCA
 GCGCAGATTGAGGATTTCTTCGGAGATCTCGACAGTCATGTGCCGATGGATGTCTTG
 GAGCTGGATATATCAAATAACGA
 CAAATCTCAGAATGAATTCCACTGTGCAGTAGAATACGAGATCTGGCGAAGATTGG
 GTTTCGAAGACTTCTTGGGAGAAG
 TTTGGAAACAAGGGCATAGAAAGACCACCTCAAGGATTATACCGCAGGTATAAAA
 ACTTGCATCTGGTATCAAAGAAAG
 AGCGGGGACGTCACGACGTTCAATTGGAAACACTGTGATCATTGCTGCATGTTTGGCC
 TCGATGCTTCCGATGGAGAAAAT
 AATCAAAGGAGCCTTTTGCGGTGACGATAGTCTGCTGTACTTTCCAAAGGGTTGTGA
 GTTTCGGATGTGCAACACTCCG
 CGAATCTTATGTGGAATTTTGAAGCAAACTGTTTAAAAAACAGTATGGATACTTTT
 GCGGAAGATATGTAATACATCAC
 GACAGAGGATGCATTGTGTATTACGATCCCCTAAAGTTGATCTCGAAACTTGGTGCT
 AAACACATCAAGGATTGGGAACA
 CTTGGAGGAGTTCAGAAGGTCTCTTTGTGATGTTGCTGTTTCGTTGAACAATTGTGCG
 TATTACACACAGTTGGACGACG
 CTGTATGGGAGGTTTATAAGACCGCCCCCTCCAGGTTTCGTTTGTATAAAAGTCTGG
 TGAAGTATTTGTCTGATAAAGTT
 CTTTTTAGAAGTTTGTATATAGATGGCTCTAGTTGTTAAAGGAAAAGTGAATATCAA
 TGAGTTTATCGACCTGACAAAAA
 TGGAGAAGATCTTACCGTCGATGTTTACCCCTGTAAAGAGTGTTATGTGTTCCAAAG
 TTGATAAAATAATGGTTCATGAG
 AATGAGTCATTGTCAGGGGTGAACCTTCTTAAAGGAGTTAAGCTTATTGATAGTGGA
 TACGTCTGTTTAGCCGTTTGGT
 CGTCACGGGCGAGTGGAACCTTGCTGACAATTGCAGAGGAGGTGTGAGCGTGTGTC
 TGGTGGACAAAAGGATGGAAAGAG
 CCGACGAGGCCACTCTCGGATCTTACTACACAGCAGCTGCAAAGAAAAGATTTTCAG
 TTCAAGGTCGTTCCCAATTATGCT
 ATAACCACCCAGGACGCGATGAAAAACGTCTGGCAAGTTTTAGTTAATATTAGAAAT
 GTGAAGATGTCAGCGGGTTTCTG
 TCCGCTTCTCTGGAGTTTGTGTGCGGTGTGTATTGTTTATAGAAATAATATAAAATTA
 GGTTTGAGAGAGAAGATTACAA

Figure 5c

ACGTGAGAGACGGAGGGCCCATGGAACCTTACAGAAGAAGTCGTTGATGAGTTCATG
 GAAGATGTCCCTATGTTCGATCAGG
 CTTGCAAAGTTTCGATCTCGAACC GGAAAAAGAGTGATGTCCGCAAAGGGGAAAAA
 TAGTAGTAGTGATCGGTCAGTGCC
 GAACAAGAACTATAGAAATGTTAAGGATTTTGGAGGAATGAGTTTTAAAAAGAATA
 ATTTAATCGATGATGATTTCGGAGG
 CTA CTGTGCGCCGAATCGGATTTCGTTTTAAATAGATCTTACAGTATCACTACTCCATCT
 CAGTTCGTGTTCTTGTCATTAA
 TTAAATGGCTAGCAAAGGAGAAGAACTTTTCACTGGAGTTGTCCCAATTCTTGTTGA
 ATTAGATGGTGATGTTAATGGGC
 ACAAATTTTCTGTCA GTGGAGAGGGTGAAGGTGATGCTACATACGGAAAGCTTACCC
 TTAAATTTATTTGCACTACTGGA
 AA ACTACCTGTTCCATGGCCAACACTTGTCACTACTTTCTCTTATGGTGTTCAATGCT
 TTTCCCGTTATCCGGATCATAT
 GAAACGGCATGACTTTTTCAAGAGTGCCATGCCCGAAGGTTATGTACAGGAACGCA
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 AGTTAAAAGGTATTGATTTTAA
 GAAGATGGAAACATTCTCGGACACAAACTCGAGTACA ACTATAACTCACACAATGT
 ATACATCACGGCAGACAAACAAAA
 GAATGGAATCAAAGCTAACTTCAAAATTCGCCACAACATTGAAGATGGATCCGTTT
 AACTAGCAGACCATTATCAACAAA
 ATACTCCAATTGGCGATGGCCCTGTCCTTTTACCAGACAACCATTACCTGTCGACAC
 AATCTGCCCTTTTGAAAGATCCC
 AACGAAAAGCGTGACCACATGGGCCTTCTTGAGTTTGTA ACTGCTGCTGGGATTACA
 CATGGCATGGATGAGCTCTACAA
 ATAATGACACTCGAGGGGTAGTCAAGATGCATAATAAATAACGGATTGTGTCCGTA
 ATCACACGTGGTGCGTACGATAAC
 GCATAGTGTTTTTCCCTCCACTTAAATCGAAGGGTTGTGTCTTGATCGCGCGGGTC
 AAATGTATATGGTTCATATACAT
 CCGCAGGCACGTAATAAAGCGAGGGGTTTCGGGTCGAGGTCGGCTGTGAAACTCGAA
 AAGGTTCCGGAAAAACAAAAAAGAG
 AGTGGTAGGTAATAGTGTTAATAATAAGAAAATAAATAATAGTGGTAAGAAAGGTT
 TGAAAGTTGAGGAAATTGAGGATA
 ATGTAAGTGATGACGAGTCTATCGCGTCATCGAGTACGTTTTAATCAATATGCCTTA
 TACAATCAACTCTCCGAGCCAAT
 TTGTTTACTTAAGTTCCGCTTATGCAGATCCTGTGCAGCTGATCAATCTGTGTACAAA
 TGCATTGGGTAACCAGTTTCAA
 ACGCAACAAGCTAGGACAACAGTCCAACAGCAATTTGCGGATGCCTGGAAACCTGT
 GCCTAGTATGACAGTGAGATTTCC
 TGCATCGGATTTCTATGTGTATAGATATAATTCGACGCTTGATCCGTTGATCACGGC
 GTTATTAAATAGCTTCGATACTA
 GAAATAGAATAATAGAGGTTGATAATCAACCCGCACCGAATACTACTGAAATCGTT
 AACGCGACTCAGAGGGTAGACGAT
 GCGACTGTAGCTATAAGGGCTTCAATCAATAATTTGGCTAATGAACTGGTTCGTGGA
 ACTGGCATGTTCAATCAAGCAAG

Figure 5d

CTTTGAGACTGCTAGTGGACTTGTCTGGACCACAACCTCCGGCTACTTAGCTATTGTTG
TGAGATTTCTTAAAATAAAGTC
ACTGAAGACTTAAAATTCAGGGTGGCTGATACCAAATCAGCAGTGGTTGTTTCGTCC
ACTTAAATATAACGATTGTCATA
TCTGGATCCAACAGTTAAACCATGTGATGGTGTATACTGTGGTATGGCGTAAAACAA
CGGAAAAGTCGCTGAAGACTTAA
AATTCAGGGTGGCTGATACCAAATCAGCAGTGGTTGTTTCGTCCACTTAAAAATAAC
GATTGTCATATCTGGATCCAACA
GTAAACCATGTGATGGTGTATACTGTGGTATGGCGTAAACAACGGAGAGGTTCTGA
ATCCTCCCCTAACCGCGGgtagcg
gccca

Figure 5e

Complete Sequence of BSG 1057 (SEQ ID NO.: 2):

GTATTTTACAACAATTACCAACAACAACAAACAGACAACATTACAATT
ACTATTTACAATTACAATGGCATAACACA
CAGACAGCTACCACATCAGCTTTGCTGGACACTGTCCGAGGAAACAACCTCT
TGGTCAATGATCTAGCAAAGCGTCGTCT
TTACGACACAGCGGTTGAAGAGTTTAACGCTCGTGACCGCAGGCCCAAGGTG
AACTTTTCAAAAGTAATAAGCGAGGAGC
AGACGCTTATTGCTACCCGGGCGTATCCAGAATTCCAAATTACATTTTATAAC
ACGCAAAATGCCGTGCATTCGCTTGCA
GGTGGATTGCGATCTTTAGAAGTGAATATCTGATGATGCAAATTCCTACGG
ATCATTGACTTATGACATAGGCGGGAA
TTTTGCATCGCATCTGTTCAAGGGACGAGCATATGTACACTGCTGCATGCCCA
ACCTGGACGTTTCGAGACATCATGCGGC
ACGAAGGCCAGAAAGACAGTATTGAACTATACCTTTCTAGGCTAGAGAGAGG
GGGGAAAACAGTCCCCAACTTCCAAAAG
GAAGCATTTGACAGATACGCAGAAATTCCTGAAGACGCTGTCTGTCACAATA
CTTCCAGACATGCGAACATCAGCCGAT
GCAGCAATCAGGCAGAGTGTATGCCATTGCGCTACACAGCATATATGACATA
CCAGCCGATGAGTTCGGGGCGGCACTCT
TGAGGAAAAATGTCCATACGTGCTATGCCGCTTTCCTACTTCTCCGAGAACCTG
CTTCTTGAAGATTCATGCGTCAATTTG
GACGAAATCAACGCGTGTTTTTCGCGCGATGGAGACAAGTTGACCTTTTCTTT
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TTCTTTTGTACAAAGGTGTGGCCCAT
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TCGACATTTCTTTGGAGACTAGTAAGAGGACGCGCAAGGAAGTCTTAGTGTC
CAAGGATTTTCGTGTTTCACAGTGCTTAAC
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CGTCGAATCGATTTCGATCGAGGGTAAT
CATTACGGTGTGACAGCGAGGTCCGAATGGGATGTGGACAAATCTTTGTTA
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GGCTCTTGAACAGGAACTTATCAGAGT
GGCAGGCGACGCATTAGAGATCAGGGTGCCTGATCTATATGTGACCTTCCAC
GACAGATTAGTGACTGAGTACAAGGCCT
CTGTGGACATGCCTGCGCTTGACATTAGGAAGAAGATGGAAGAAACGGAAGT
GATGTACAATGCACTTTCAGAATTATCG

Figure 6a

GTGTAAAGGGAGTCTGACAAATTCGATGTTGATGTTTTTTCCCAGATGTGCCA
 ATCTTTGGAAGTTGACCCAATGACGGC
 AGCGAAGGTTATAGTCGCGGTCATGAGCAATGAGAGCGGTCTGACTCTCACA
 TTTGAACGACCTACTGAGGCGAATGTTG
 CGCTAGCTTTACAGGATCAAGAGAAGGCTTCAGAAGGTGCATTGGTAGTTAC
 CTCAAGAGAAGTTGAAGAACCGTCCATG
 AAGGGTTCGATGGCCAGAGGAGAGTTACAATTAGCTGGTCTTGCTGGAGATC
 ATCCGGAATCGTCCTATTCTAAGAACGA
 GGAGATAGAGTCTTTAGAGCAGTTTCATATGGCGACGGCAGATTCGTTAATTC
 GTAAGCAGATGAGCTCGATTGTGTACA
 CGGGTCCGATTAAAGTTCAGCAAATGAAAACTTTATCGATAGCCTGGTAGC
 ATCACTATCTGCTGCGGTGTCGAATCTC
 GTCAAGATCCTCAAAGATACAGCTGCTATTGACCTTGAAACCCGTCAAAAGT
 TTGGAGTCTTGGATGTTGCATCTAGGAA
 GTGGTTAATCAAACCAACGGCCAAGAGTCATGCATGGGGTGTTGTTGAAACC
 CACGCGAGGGAGTATCATGTGGCGCTTT
 TGAATATGATGAGCAGGGTGTGGTGACATGCGATGATTGGAGAAGAGTAGC
 TGTTAGCTCTGAGTCTGTTGTTTATTCC
 GACATGGCGAAACTCAGAACTCTGCGCAGACTGCTTCGAAACGGAGAACCGC
 ATGTCAGTAGCGCAAAGGTTGTTCTTGT
 GGACGGAGTTCGGGGCTGTGGAAAAACCAAAGAAATTCTTTCCAGGGTTAAT
 TTTGATGAAGATCTAATTTTAGTACCTG
 GGAAGCAAGCCGCGGAAATGATCAGAAGACGTGCGAATTCCTCAGGGATTAT
 TGTGGCCACGAAGGACAACGTAAACC
 GTTGATTCTTTTCATGATGAATTTTGGGAAAAGCACACGCTGTCAGTTCAAGAG
 GTTATTCATTGATGAAGGGTTGATGTT
 GCATACTGGTTGTGTTAATTTTCTTGTGGCGATGTCATTGTGCGAAATTGCAT
 ATGTTTACGGAGACACACAGCAGATTC
 CATACTCAATAGAGTTTCAGGATTCCCGTACCCCGCCCATTTTGCCAAATTG
 GAAGTTGACGAGGTGGAGACACGCAGA
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 GGGCTTTGTCATGAGCACTTCTTCGGT
 TAAAAAGTCTGTTTCGCAGGAGATGGTCGGCGGAGCCGCGGTGATCAATCCG
 ATCTCAAAACCCTTGCATGGCAAGATCC
 TGACTTTTACCCAATCGGATAAAGAAGCTCTGCTTTCAAGAGGGTATTCAGAT
 GTTACACTGTGCATGAAGTGCAAGGC
 GAGACATACTCTGATGTTTCACTAGTTAGGTAAACCCCTACACCGGTCTCCAT
 CATTGCAGGAGACAGCCCACATGTTTT
 GGTGCGATTGTCAAGGCACACCTGTTGCTCAAGTACTACACTGTTGTTATGG
 ATCCTTTAGTTAGTATCATTAGAGATC
 TAGAGAACTTAGCTCGTACTTGTAGATATGTATAAGGTCGATGCAGGAAC
 ACAATAGCAATTACAGATTGACTCGGTG
 TTCAAAGGTTCCAATCTTTTTGTTGCAGCGCCAAAGACTGGTGATATTTCTGA
 TATGCAGTTTTACTATGATAAGTGTCT
 CCCAGGCAACAGCACCATGATGAATAATTTTGATGCTGTTACCATGAGGTTG
 ACTGACATTCATTGAATGTCAAAGATT

Figure 6b

GCATATTGGATATGTCTAAGTCTGTTGCTGCACCTAAGGATCAAATCAAACCA
 CTAATACCTATGGTACGAACGGCGGCA
 GAAATGCCACGCCAGACTGGACTATTGGAAAATTTAGTGGCGATGATTAAAA
 GAAACTTTAACGCACCCGAGTTGTCTGG
 CATCATTGATATTGAAAATACTGCATCTTTGGTTGTAGATAAGTTTTTTGATA
 GTTATTTGCTTAAAGAAAAAAGAAAAAC
 CAAATAAAAAATGTTTCTTTGTTTCAGTAGAGAGTCTCTCAATAGATGGTTAGAA
 AAGCAGGAACAGGTAACAATAGGCCAG
 CTCGCAGATTTTGTATTTGTGGATTTGCCAGCAGTTGATCAGTACAGACACAT
 GATTAAAGCACAACCCAAACAAAAGTT
 GGACACTTCAATCCAAACGGAGTACCCGGCTTTGCAGACGATTGTGTACCAT
 TCAAAAAAGATCAATGCAATATTCGGCC
 CGTTGTTTAGTGAGCTTACTAGGCAATTACTGGACAGTGTTGATTTCGAGCAGA
 TTTTGTTTTTTACAAGAAAGACACCA
 GCGCAGATTGAGGATTTCTTCGGAGATCTCGACAGTCATGTGCCGATGGATG
 TCTTGGAGCTGGATATATCAAAATACGA
 CAAATCTCAGAATGAATTCCACTGTGCAGTAGAATACGAGATCTGGCGAAGA
 TTGGGTTTCGAAGACTTCTTGGGAGAAG
 TTTGGAAACAAGGGCATAGAAAGACCACCCTCAAGGATTATACCGCAGGTAT
 AAAAAGTTGCATCTGGTATCAAAGAAAG
 AGCGGGGACGTCACGACGTTTATTGGAAACACTGTGATCATTGCTGCATGTTT
 GGCCTCGATGCTTCCGATGGAGAAAAT
 AATCAAAGGAGCCTTTTGCGGTGACGATAGTCTGCTGTACTTTCCAAAGGGTT
 GTGAGTTTCCGGATGTGCAACACTCCG
 CGAATCTTATGTGGAATTTTGAAGCAAAACTGTTTAAAAAACAGTATGGATA
 CTTTTGCGGAAGATATGTAATACATCAC
 GACAGAGGATGCATTGTGTATTACGATCCCCTAAAGTTGATCTCGAAACTTG
 GTGCTAAACACATCAAGGATTGGGAACA
 CTTGGAGGAGTTCAGAAGGTCTCTTTGTGATGTTGCTGTTTCGTTGAACAATT
 GTGCGTATTACACACAGTTGGACGACG
 CTGTATGGGAGGTTTATAAGACCGCCCCTCCAGGTTTCGTTTGTATAAAAGT
 CTGGTGAAGTATTTGTCTGATAAAGTT
 CTTTTTAGAAGTTTGTATAAGATGGCTCTAGTTGTTAAAGGAAAAGTGAATA
 TCAATGAGTTTATCGACCTGACAAAAA
 TGGAGAAGATCTTACCGTCGATGTTTACCCCTGTAAAGAGTGTTATGTGTTCC
 AAAGTTGATAAAATAATGGTTCATGAG
 AATGAGTCATTGTCAGGGGTGAACCTTCTTAAAGGAGTTAAGCTTATTGATAG
 TGGATACGTCTGTTTAGCCGGTTTGGT
 CGTCACGGGCGAGTGGAACCTTGCTGACAATTGCAGAGGAGGTGTGAGCGTG
 TGTCTGGTGGACAAAAGGATGGAAAGAG
 CCGACGAGGCCATTCTCGGATCTTACTACACAGCAGCTGCAAAGAAAAGATT
 TCAGTTCAAGGTCGTTCCCAATTATGCT
 ATAACCACCCAGGACGCGATGAGAAACGTCTGGCAAGTTTTAGTTAATATTA
 GAAATGTGAAGATGTCAGCGGGTTTCTG
 TCCGCTTTCTCTGGAGTTTGTGTCTGGTGTGATTGTTTATAGAAATAATATAA
 AATTAGGTTTGAGAGAGAAGATTACAA

Figure 6c

ACGTGAGAGACGGAGGGGCCCATGGAACCTTACAGAAGAAGTCGTTGATGAGTT
 CATGGAAGATGTCCCTATGTCGATCAGG
 CTTGCAAAGTTTCGATCTCGAACCGGAAAAAAGAGTGATGTCCGCAAAGGGA
 AAAATAGTAGTAGTGATCGGTCAGTGCC
 GAACAAGAACTATAGAAATGTTAAGGATTTTGGAGGAATGAGTTTTAAAAAG
 AATAATTTAATCGATGATGATTCGGAGG
 CTACTGTCGCCGAATCGGATTCGTTTAAATAGATCTTACAGTATCACTACTC
 CATCTCAGTTCGTGTTCTTGTCA_{ttaa}
_{ttaa}ATGGCTAGCAAAGGAGAAGAAGCTTTTCACTGGAGTTGTCCCAATTCTTGTT
 GAATTAGATGGTGATGTTAATGGGC
 ACAAATTTTCTGTCAGTGGAGAGGGTGAAAGGTGATGCTACATACGGAAAGCT
 TACTCTTAAATTTATTTGCACTACTGGA
 AAACCTACCTGTTCCATGGCCAACACTTGTCACTACTTTCTCTTATGGTGTTCA
 ATGCTTTTCCCGTTATCCGGATCATAT
 GAAACGGCATGACTTTTTCAAGAGTGCCATGCCCGAAGGTTATGTACAGGAA
 CGCACTATATCTTTCAAAGATGACGGGA
 ACTACAAGACGCGTGCTGAAGTCAAGTTTGAAGGTGATACCCTTGTTAATCG
 TATCGAGTTAAAAGGTATTGATTTTAAA
 GAAGATGGAAACATTCTCGGACACAACTCGAGTACAACTATAACTCACACA
 ATGTATACATCACGGCAGACAAACAAAA
 GAATGGAATCAAAGCTAACTTCAAAATTCGCCACAACATTGAAGATGGATCC
 GTTCAACTAGCAGACCATTATCAACAAA
 ATACTCCAATTGGCGATGGCCCTGTCCTTTTACCAGACAACCATTACCTGTCG
 ACACAATCTGCCCTTTTCGAAAGATCCC
 AACGAAAAGCGTGACCACATGGTCCTTCTTGAGTTTGTAAGTGTGCTGGGAT
 TACACATGGCATGGATGAGCTCTACAA
 ATAATGACACTCGAGGGGTAGTCAAGATGCATAATAATAACGGATTGTGTC
 CGTAATCACACGTGGTGCGTACGATAAC
 GCATAGTGTTTTTCCCTCCACTTAAATCGAAGGGTTGTGTCTTGGATCGCGCG
 GGTCAAATGTATATGGTTCATATACAT
 CCGCAGGCACGTAATAAAGCGAGGGGTTTCGGGTCGAGGTCGGCTGTGAAACT
 CGAAAAGGTTCCGGAAAACAAAAAAGAG
 AGTGGTAGGTAATAGTGTTAATAATAAGAAAATAATAATAGTGGTAAGAAA
 GGTTTGAAAGTTGAGGAAATTGAGGATA
 ATGTAAGTGATGACGAGTCTATCGCGTCATCGAGTACGTTTTAATCAATATGC
 CTTATACAATCAACTCTCCGAGCCAAT
 TTGTTTACTTAAGTTCCGCTTATGCAGATCCTGTGCAGCTGATCAATCTGTGT
 ACAAATGCATTGGGTAACCAAGTTTCAA
 ACGCAACAAGCTAGGACAACAGTCCAACAGCAATTTGCGGATGCCTGGAAAC
 CTGTGCCTAGTATGACAGTGAGATTTCC
 TGCATCGGATTTCTATGTGTATAGATATAATTCGACGCTTGATCCGTTGATCA
 CGGCGTTATTAAATAGCTTCGATACTA
 GAAATAGAATAATAGAGGTTGATAATCAACCCGCACCGAATACTACTGAAAT
 CGTTAACGCGACTCAGAGGGTAGACGAT
 GCGACTGTAGCTATAAGGGCTTCAATCAATAATTTGGCTAATGAACtGGTTTCG
 TGGAACCTGGCaTGTTCAATCAAGCAAG

Figure 6d

CTTTGAGACTGCTAGTGGACTTGTCTGGACCACAACTCCGGCTACTTAGctattgtt
gtgagatttcctaaaataaagtc
actgaagacttaaaattcagggtggctgataccaaaatcagcagtggtgttcgtccacttaaatataacgattgtcata
tctggatccaacagttaaacatgtgatgggtatactgtggtatggcgtaaaacaacggaaaagtcgctgaagacttaa
aattcagggtggctgataccaaaatcagcagtggtgttcgtccacttaaaataacgattgtcatatctggatccaaca
gttaaaccatgtgatgggtatactgtggtatggcgtaaaacaacggagaggttcgaatcctcccctaaccgcgggtagc
ggccca

Figure 6e



Schematic map of location of mutations in BSG 1057.
 30K = movement protein; GFP = green fluorescent protein;
 CP = coat protein. Nucleotide positions of BSG 1057 mutations
 are noted.

Figure 7



Figure 8